No. 43, 1956
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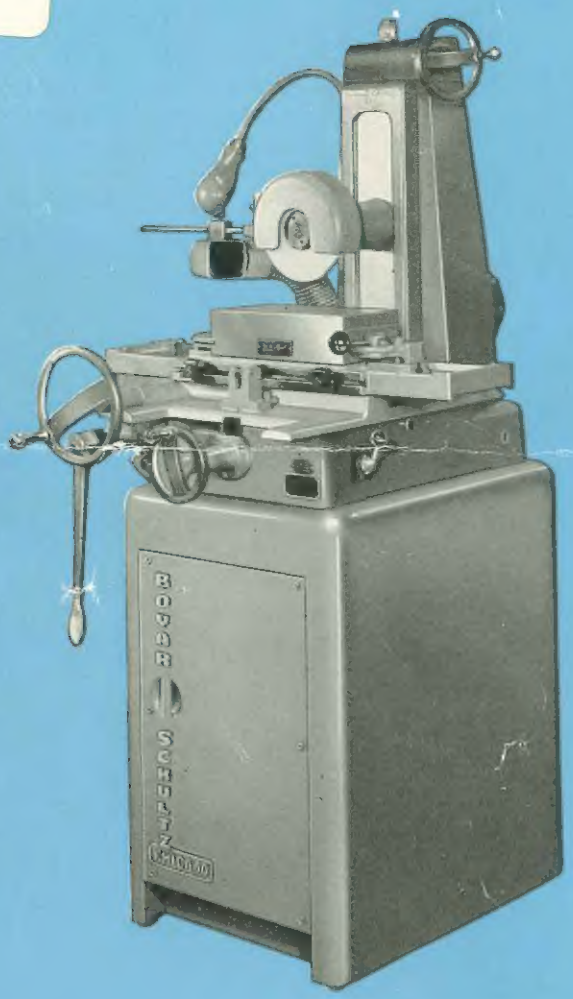
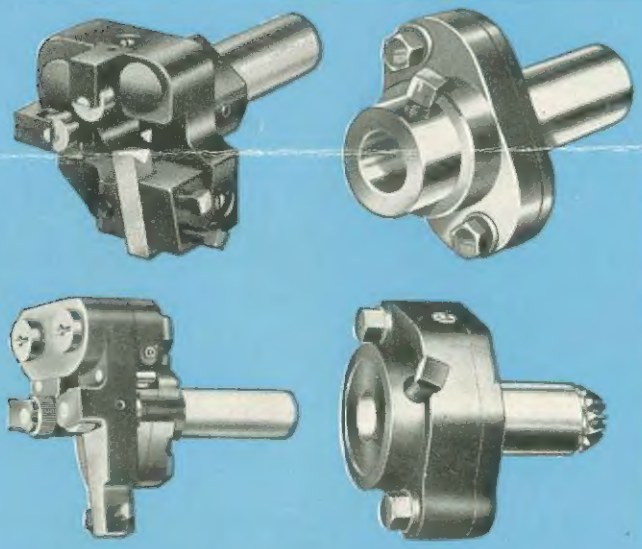


grinders



screw machine tools

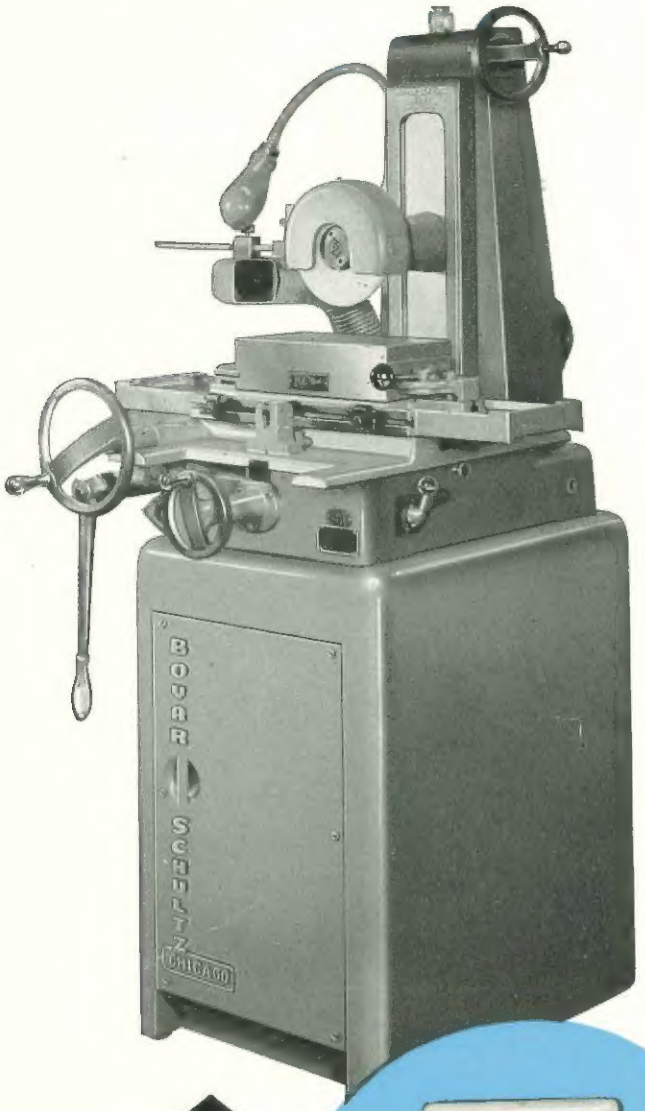
BOYAR-SCHULTZ CORPORATION

2000 South 25th Avenue BROADVIEW, ILLINOIS

Boyar-Schultz

Surface Grinder • model 6-12

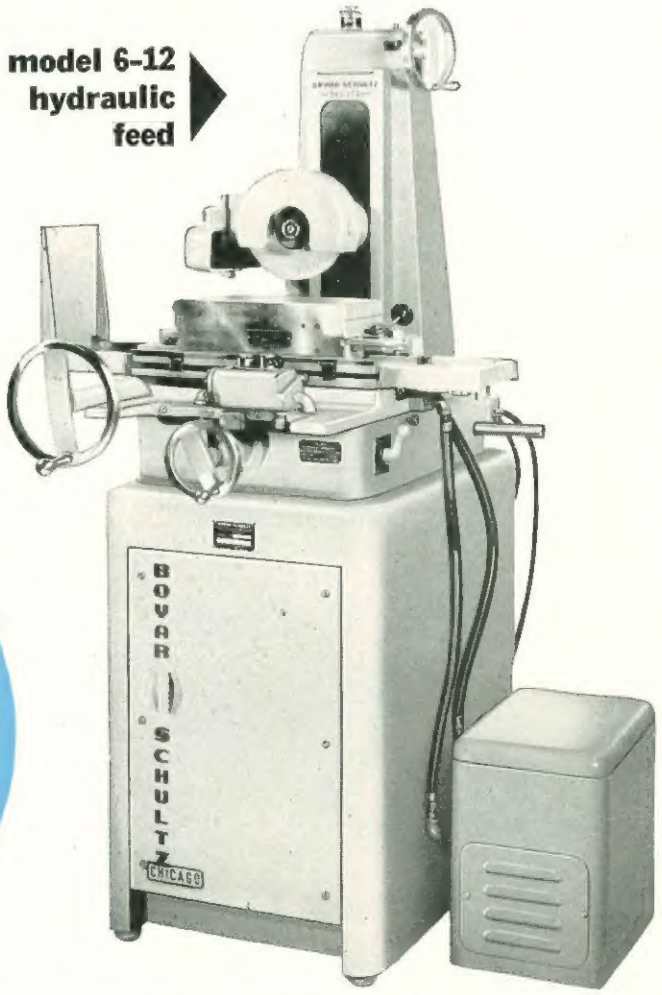
- A low cost, highly efficient, precision machine tool that has consistently demonstrated the close tolerance performance that has always been associated with larger, more costly grinders.
- The manually operated type 6–12 is capable of handling a high percentage of the work ordinarily being done on larger machines.
- Capacity: 7-in. cross feed travel, 13-in. longitudinal travel, 11¼-in. vertical travel of spindle.
- Spindle—This is the "working unit," the very heart of the machine and is designed for very close tolerance, smooth finish grinding; supported at each end by over-size, pre-loaded, radial thrust, permanently lubricated precision ball bearings. Spindle is motivated by a special ½ hp motor and connected to motor by precision made pulleys and selected V-belt. Sturdily built, it will absorb the heavy demands put upon it during a long period of time.
- Table—Made of top grade, stress and strain relieved high alloy iron casting. One Vee and one flat way, ground and hand scraped for smooth operation.



hand feed

dust collector unit

model 6-12 hydraulic feed



Model 6-12 Surface Grinder is also available with Hydraulic longitudinal action. In this model are incorporated all the fine qualities which have made the Hand Feed machine so outstanding in the machine tool industry. It can be changed from hydraulic to hand feed and return in a few seconds.

- Longitudinal table action by hand wheel and rapid traverse table lever. Either may be disengaged while the other is in use. Larger hand wheel provides extra leverage.
- Table carriage travels on precision hand scraped ways mounted on main grinder base. Cross feed travel is actuated by lead screw supported by needle bearings. A cross feed binding screw stops transverse motion as desired.
- Spindle elevating screw responds instantly to slightest movement of hand wheel because radial thrust bearing provides constant tension between hand wheel shaft and vertical screw.
- Hand wheels are conveniently located and fitted with needle bearings for easy operation.
- Working parts enclosed for protection from abrasive dust.
- Dust collector unit is furnished as optional equipment and fitted at the factory into the newly designed, streamlined stand. No additional floor space is required. Dust is trapped in spark resistant filter bags. Nylon brushes, one in each of the 15 filter bags, remove dust that may cling to the inside of the bags. Brushes are operated simultaneously by a handle at rear of stand, dropping dust into a removable tray. Entire dust collecting system is quickly and easily removed for complete cleaning when necessary.

Specifications (6-12)

	Hydraulic Feed	Hand Feed
Table Travel		
Longitudinal	13″	13″
Cross Feed	7″	7″
Work Height (using 7″ diam. wheel)	0″ to 11 ¼″	0″ to 11 ¼″
Table Working Surface ("T" slot, ⅜″ width)	12″ x 5 ⅝″	12″ x 5 ⅝″
Grind Wheel		
Diameter	7″	7″
Thickness	3/16″ to ½″	3/16″ to ½″
Hole Diam.	1 ¼″	1 ¼″
Spindle Speed	3000 rpm	3000 rpm
Handwheel Graduation		
Vertical	.0005″	.0005″
Cross Feed	.001″	.001″
Longitudinal Table Speed	0—50 fpm	
Spindle Motor	½ hp—3450 rpm	½ hp—3450 rpm
Hydraulic Pump Motor	¼ hp—1725 rpm	
Floor Space	44″ x 38″	43″ x 38″
Height		
(Bench Model)	32″	32″
(Floor Model)	62″	62″
Weight		
Net	485 lb	415 lb
Shipping	705 lb	561 lb

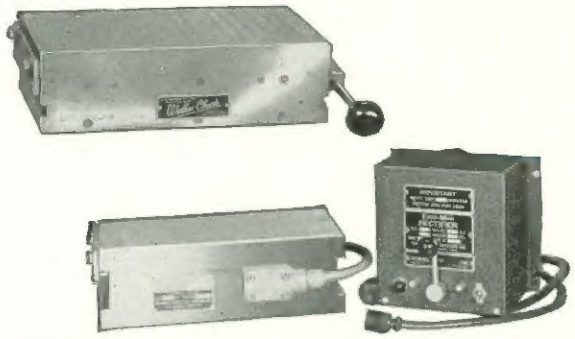
Standard equipment:

Complete and ready to operate with ½ hp precision motor, starting switch, 7″x½″x1¼″ wheel, wheel adapter, cross feed binding screw and wrench.

Optional accessories:

Metal pedestal base, dust collector, rapid traverse lever arm, adjustable light, magnetic chucks (5″x10″ and 6″x12″), adjustable longitudinal table stops, wet coolant attachment, diamond dresser and diamond.

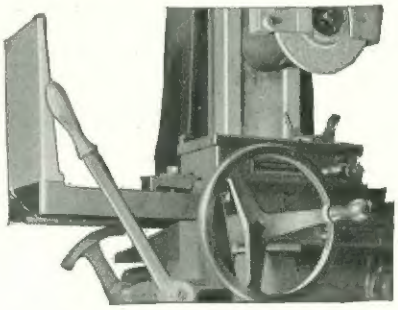
Optional equipment



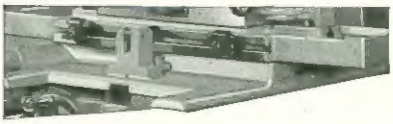
Hanchett Magna-Lock electro magnetic chuck (right) with rectifier (illustrated). Also available are Walker permanent magnetic chucks (at left). Chuck sizes 5″ x 10″ and 6″ x 12″.

Diamond dresser and diamond. A sturdy fixture presenting a generous surface to magnetic chuck.

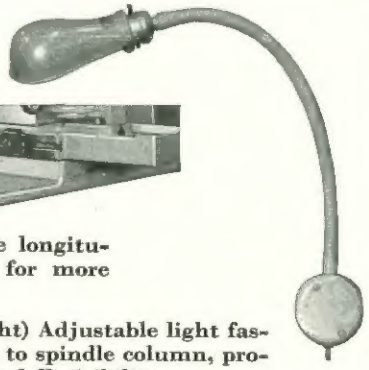
Wet coolant attachment complete with pump and splash guards, drilled hole and sealing gaskets. Either pump or splash guards available separately.



Rapid traverse table lever used in place of hand wheel for faster operation. Quickly disengaged when hand wheel is used.



(Above) Adjustable longitudinal table stops for more rapid production.

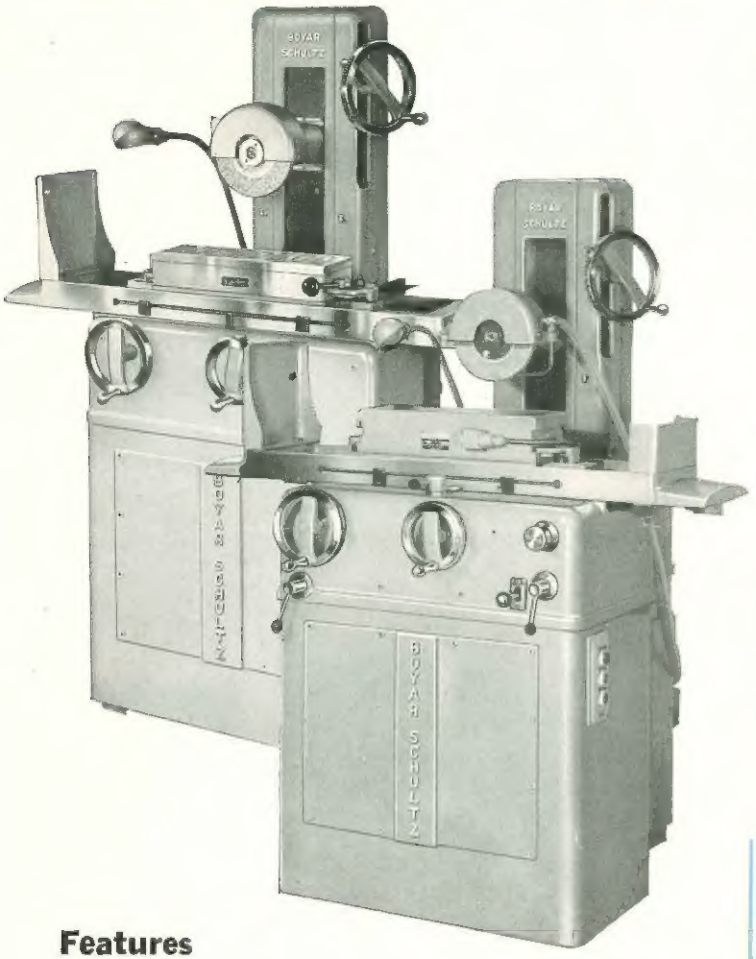


(Right) Adjustable light fastens to spindle column, provides full visibility.

Motors available:

110-V, 60 cycle, single-phase (standard)
220-V, 60 cycle, three-phase (standard)
440-V, 60 cycle, three-phase (special)

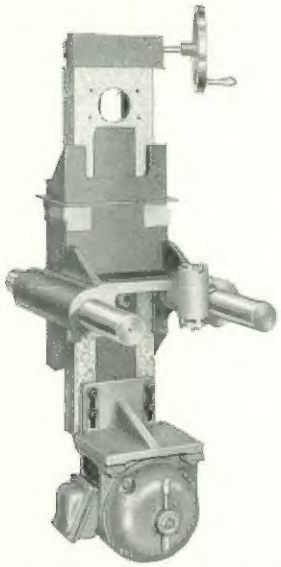
Boyar-Schultz



Surface Grinder • model 6-18

- this Hydraulic Surface Grinder, designed and developed by Boyar-Schultz engineers, is unquestionably the finest machine of its kind ever offered.
- a modern machine tool, designed both for the extreme precision necessary in tool and die work, as well as speed, ease of operation and endurance necessary for economical production work.
- rugged construction and superior engineering assure constant accuracy for a longer life than is usually expected of the finest surface grinders.
- smooth easy acting controls arranged for greatest convenience.
- improved heavy duty spindle using a regular 8″ x ⅝″ wheel but built to accommodate 8″ x ¾″ wheels. Spindle is equipped with pre-loaded, permanently lubricated, "super-precision" bearings and operates at 3000 rpm.
- ways are tool steel, hardened and ground, and provide an accurate long wearing base for the table to move upon. The table is a close-grained high alloy iron casting, specially seasoned.
- improved vertical and cross feed movement through unique method of supporting the internal mechanism, insures close, long sustaining accuracy.

Features



Column assembly combining vertical and cross feed in a single unit. Hardened and ground cylindrical ways provide accurate, long wearing surface for cross feed travel.

Vertical feed assembly shows precision screw which turns through a perfectly fitted steel worm and bronze gear, operating in grease packed, sealed gear box.

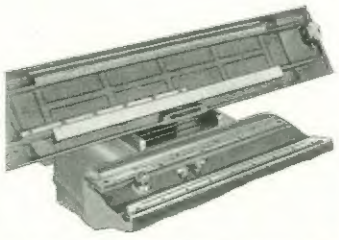


Table ways, one V and one flat are ground and hand scraped They travel on hardened and ground tool steel ways.

Specifications

	Hydraulic Feed	Hand Feed
Table Travel		
Longitudinal	19″	20″
Cross Feed	7 ¼″	7¼″
Vertical Height	16″ from table top to center of spindle	16″ from table top to center of spindle
Table Working Surface (3 "T" slots, ½″ width)	18″ x 6″	18″ x 6″
Grinding Wheel		
Diameter	8″	8″
Thickness	3/16″ to ¾″	3/16″ to ¾″
Hole Diam	1 ¼″	1 ¼″
Spindle Speed	3000 rpm	3000 rpm
Handwheel Graduation		
Vertical	.0005″	.0005″
Cross Feed	.001″	.001″
Longitudinal Table Speed	0 to 50 fpm	
Auto. Cross Feed	0—5/32″ Per Stroke	
Spindle Motor	1 ½ hp—1725 rpm	1 ½ hp—1725 rpm
Hydraulic Pump Motor	½ hp—1725 rpm	
Floor Space	73 ¼″ x 45″	73¼″ x 41″
Height	65 ¾″	65¾″
Weight		
Net	1770 lb	1460 lb
Shipping	2156 lb	1780 lb

Standard equipment:

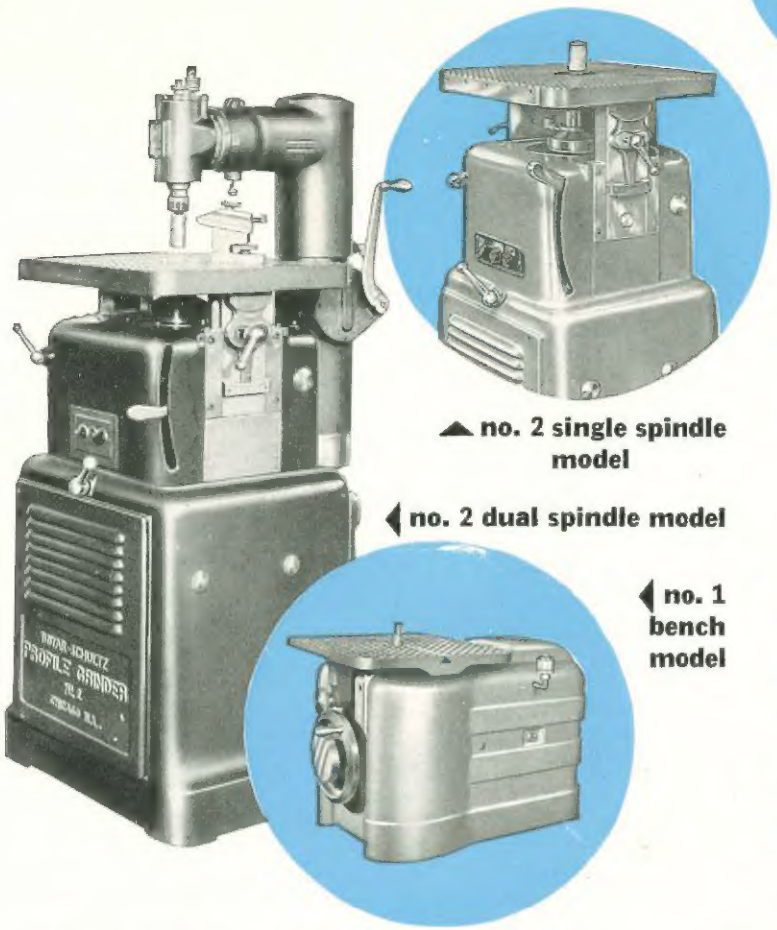
Complete as shown and ready to operate with adjustable light, wheel sleeve, wheel wrench, one 8″ grinding wheel ⅝″ thick, motor equipment, electrical controls and wiring.

Optional accessories:

6″x18″ Magnetic chucks (permanent or electromagnetic type), wet coolant attachment, diamond dresser and diamond.

grinders

surface-profile



▲ no. 2 single spindle model

◀ no. 2 dual spindle model

◀ no. 1 bench model

Profile Grinders

No. 2 dual and single spindle models

- Outstanding time saver in tool room or production, for grinding odd, difficult shapes, contours and profiles. Particularly useful in grinding and fitting dies and punches and special machinery parts. Also ideal for quickly grinding and finishing cams, templates and other work to scribed lines.
- Specially designed spindles maintain 10,000 rpm. This high speed provides rapid stock removal even with small diameter wheels. Vertical oscillations give even wheel wear.
- **Dual spindle model.** With both spindles, every kind of profile and contour grinding can be accomplished in a minimum of time. Spindles independently powered, accommodate wheels from ¼" to 3" diameter. Table tilts forward or backward 10 deg. from horizontal. Upper spindle head may be tilted as much as 10 deg. to the right or left from vertical. Graduated quadrant is provided to facilitate settings in grinding angles.
- **Single spindle model** is fundamentally the same as the dual spindle model, without the overarm.

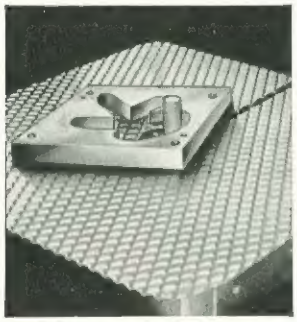
No. 1 bench model profile grinder

- Specially designed for smaller work. Fast operating, precision tool for grinding difficult and irregular shapes and profiles, and similar time consuming jobs.

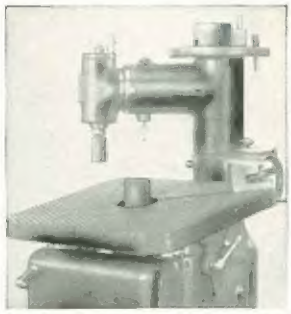
  Spindle speed of 20,000 rpm assures rapid stock removal, even with small wheels. Takes ⅛" to 1" diameter wheels.
- Fitted with square table having serrated top which permits smoother movement of work, thus greater ease in operation.
- Odd and irregular shapes, inside or outside contours easily and accurately performed.

  Time savers in tool and die work. Grinding and re-grinding die clearances, repairing broken dies, sharpening punches.

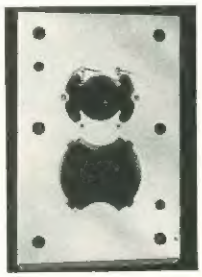
Features and Typical work



Grinding the inside contours of a die block.



No. 2 dual spindle model with table tilted.



Typical work includes grinding inside and outside contours, grinding and regrinding die clearances as well as repairing broken dies.

Specifications—profile grinders

		No. 2		No. 1
Model		dual spindle	single spindle	bench
Spindle Speed*		10,000 rpm		20,000 rpm
Wheel Capacity		¼" to 3"		⅛" to ¾"
Arbor Capacity		⅛" to ½"		¼" bushings
Vertical Oscillations		Lower spindle 5/16", 100/min. upper spindle adjustable up to 1/16" maximum, 250/min.	3/16", 100/min.	⅛", 100/min
Upper Spindle Head		Vertical adjustment 3 in. Angle adjustment 10° right or left from vertical	Not applicable	Not applicable
Table		20" x 18" x 1¾", 4" vertical adjustment. Tilts forward or backward 10° from horizontal.		10" x 10" with serrated top. Setting angle 5° max. Height adjustment, 1¼"
LxWxH Overall		28" x 27" x 59"	18" x 24" x 43"	16½" x 10½" x 11¾"
Motors		upper spindle, 1 hp lower spindle, 2 hp	2 hp	⅓ hp
Weight (approx.)	net	1000 lb	750 lb	87 lb
	shipping	1140 lb	850 lb	115 lb

*The use of high speed or carboloy cutters and burrs for special work, may require lower speeds. Extra pulley for reduced spindle speeds, optional at extra cost.

Standard equipment

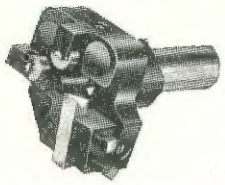
No. 2 dual spindle model only. Special starter box; safety selector switch; riser block for dressing upper wheel.

No. 2 dual spindle and single spindle models. Special wheel dresser with diamond; safety guard for dressing wheels; open and spanner wrenches; one each of the following wheels: ¾"x2¼", 1½"x2¼", 2½"x2½", all with ½" arbors; one ½" collet.

No. 1 bench model. Wheel dresser with diamond, rubber cord; two split bushings for arbors under ¼" diameter; sine bar feeler gages 1/64", 1/32", 1/16", ⅛"; socket wrench; one each of following mounted wheels: 3/16"x¾", ¼"x1", ⅜"x1¼", ½"x1", ⅝"x1", ¾"x1".

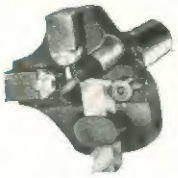
Boyar-Schultz

Turning Tool



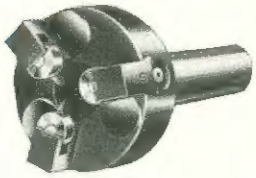
model T: A Turning Tool for automatic and hand screw machines, designed to provide fine accuracy and the sturdiness to hold to close tolerances through long production runs. Tool sizes: 000, 00, 0, 2, 3.

Turning Tool



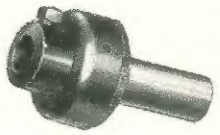
model B: A sturdy compact box tool designed to take heavy cuts, with sustained accuracy. This tool has swiveling tool bit and separately adjusted rollers which make possible delicate adjustments with great ease. Tool sizes: 00, 0, 2.

Burnishing Tool



model C: Ideal tool for use where a surface smoother than the usual machined finish is required. It is a rugged, simple burnishing tool, easy to adjust. In many instances it may be used to eliminate an extra operation. Tool sizes: 00, 0, 2.

Floating Reamer Holder

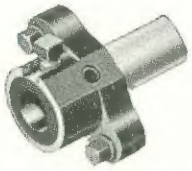


model D: For very accurate reaming. Full floating feature corrects misalignment between tool and work. Also adaptable for floating drills on special drilling operations. Tool sizes: 000, 00, 0, 2, 3, 4, 5, 6.

Adjustable Drill and Reamer Holder

model DRH: Made to precision limits, from drop forged, alloy steel and designed to resist strain and impact. Hardened and ground bore and shank assure quick, easy adjustment and save set-up time. Tool sizes: 00, 0, 2.

Adjustable Tap Holders

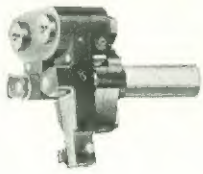


Non-releasing types Model A-T, (3 sizes) and releasing types Model AR, (5 sizes). Correct alignment of taps between turret and work is quickly possible with both types. Tap breakage is reduced to a minimum.

Cross Slide Knurling & Thread Rolling Tool

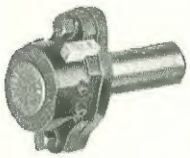
model SK: Developed for single spindle automatics, this tool can be used on either front or rear cross slide. It is also adaptable to multiples, hand screw machines and turret lathes. Tool sizes: 00, 0, 2.

Knurling Tool



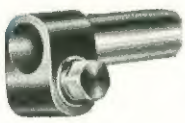
model K: Operates from screw machine turret. Knurls from front cross slide working against lever arm of tool, moving both knurling arms from open position to correct dia. Three sizes: 3/8", 5/8", and 7/8" capacities.

Pointing Tool



model AP: Universal adjustable Pointing Tool keeps wasteful "down time" to a minimum. Set-up costs are reduced as it is not necessary to make or buy special form tools. Three sizes: 3/8", 5/8" and 7/8" capacities.

Adapter



model H: A precision made tool that increases the flexibility of screw machines permitting the use of more than one size tool in a screw machine of a given size. Six sizes: 5/8", 3/4" and 1" capacities.

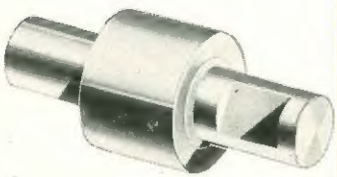
Tool Bit Grinding Fixture

model G: Bits ground with this fixture hold cutting loads longer, giving more pieces per grind. Properly ground bits hold size and maintain tolerances, producing better finish. Bits last longer.

Turret Lathe Tool

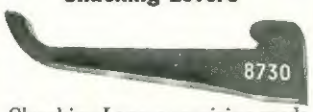
model TLT: For straight shoulder turning. It does the job faster, is easier to set up and makes the tool bit re-grinding simpler. New clamping method increases rigidity. Tool bit can be ground on both ends. Sizes to fit most turret lathes.

Cam Rollers & Pins



Made from fine alloy steel and precision machined to a high finish, that assure the accuracy so necessary in the precision operation of screw machines.

Chucking Levers

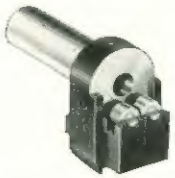


Chucking Levers precision made of high alloy materials and made to fit No. 00, No. 0 and No. 2 screw machines. Immediate delivery.

Recessing Tools

Commonly used to groove I. D. and recess back end of piece part before cutting off, saving separate operation. **Available from stock.**

Roller Rests



model RR: Eliminates galling and marring of parts and rapid wear that cause variation in diameters. Individually adjusted rollers permit closer tolerances over longer runs than is possible with a solid support. Capacities 3/32 to 1/2 in. and 1/4 to 5/8 in.

Revolving Stop

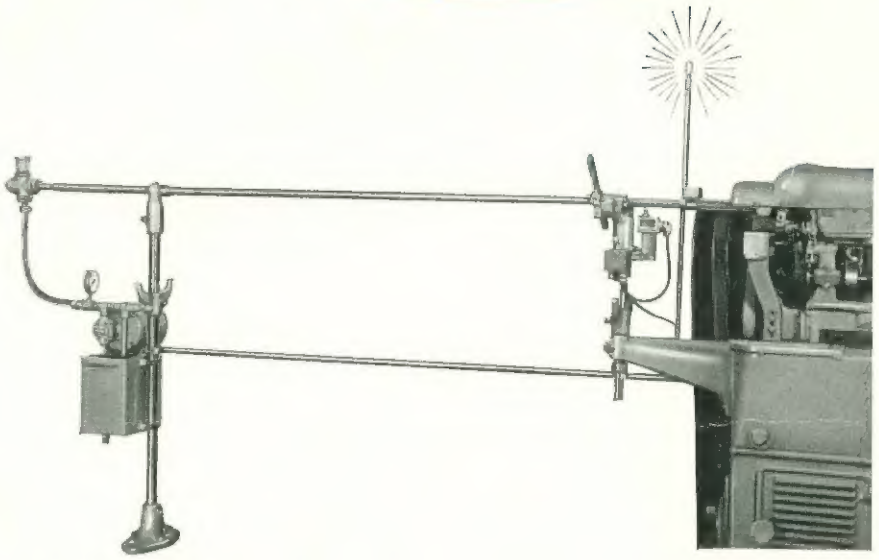
model RS: Revolving Stop that features a free turning, live head which eliminates friction between work and stop. Prevents marring finish during stock feed out. Available in nine lengths, 1 3/4" to 7 7/16" and five diameters 5/8" to 1 3/4".

HYDRA-LITE
hydraulic bar feed

$200 PER YEAR SAVINGS

The patented features of the New Improved Boyar-Schultz HYDRA-LITE Bar Feed for screw machines, eliminates the need for feed fingers, feed tubes and feed slides—parts that require frequent replacement and repair. A motor driven, self contained unit, it is designed primarily for single spindle automatic screw machines and can be adapted to any other single spindle machine.

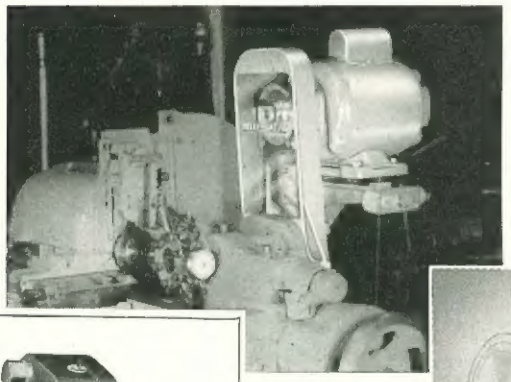
- Signal light automatically warns when machine needs re-stocking.
- All feed finger scratches are eliminated.
- Chamfering bar ends is unnecessary.
- The new **HYDRA-LITE Bar Feed** guarantees greater accuracy from start to finish with a minimum of bar-end waste.
- Patented controls prevent shock at turret stop, adding longer life to machine and offering better job performance.
- Reversing switch returns piston to rear of stock tube.
- Installation time has been reduced to a minimum.
- This new **HYDRA-LITE Bar Feed** is available in seven different sizes accommodating diameters from 3/32″ to 1½″.

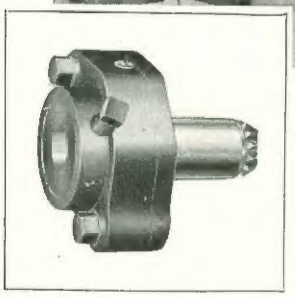


Specifications

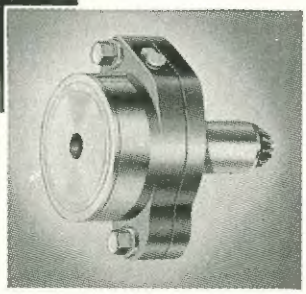
The Hydra-Lite Hydraulic Bar Feed is adaptable to all single spindle machines. The standard models in stock are: ⅜″, ½″, ⅝″, 1⅛″, 1¼″, and 1½″ diameter capacities.

Electrical connection required: 110 V., 60 C. Transformers for other voltages on special order.
120 V., 15 watt shock resistant Signal lite.
Shipping Weight: Approximately 125 lbs.



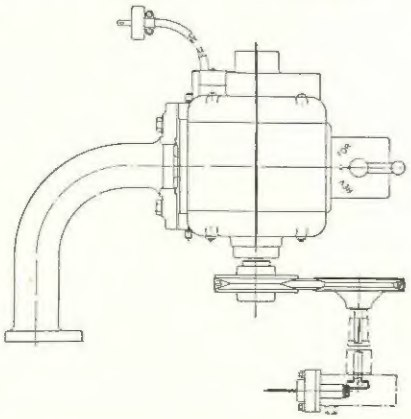


DA Deep Hole Drilling Tool



RDA Revolving Deep Hole Drilling Tool

Drawing at right shows mounting position of Model VD Driving Unit with Revolving Deep Hole Drilling Tool.



revolving and non-revolving
DEEP HOLE DRILLING TOOLS and Model VD DEEP HOLE DRILL DRIVING UNIT

A compact V-Belt Drive Unit with variable speed pulleys, can be mounted on No. 00—No. 0 and No. 2 Automatic Screw Machines. No machining of any kind is required for mounting.

The drive allows free and easy movement of the turret slide without binding or jamming.

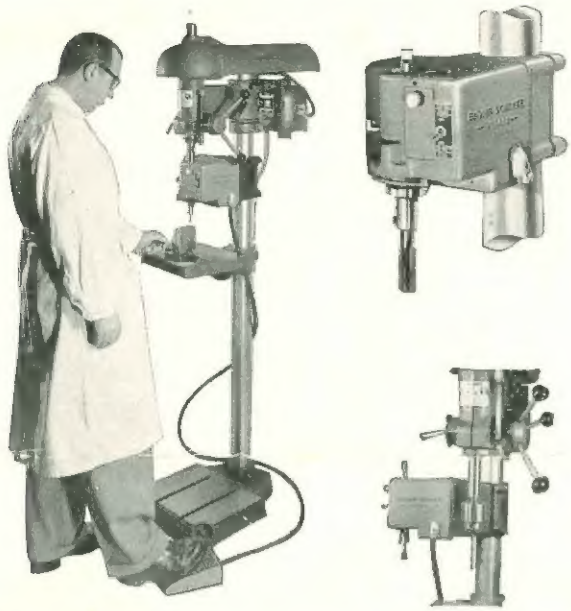
Designed primarily for use with both Boyar-Schultz Revolving and Non-Revolving Deep Hole Drilling Tools, the driving unit can also be used for other tools requiring power from the Screw Machine turret.

Available on request: Complete Screw Machine Tool Catalog.

A comprehensive data book with complete information including dimensions, specifications and capacities for all Boyar-Schultz Screw Machine Tools. Ask for your copy today!

BOYAR-SCHULTZ

Lead Screw Tapping Attachment for Drill Presses



In the matter of ½ hour your drill press can be transformed into a highly efficient tapping machine by using a Boyar-Schultz Lead Screw Tapping Attachment. Threads up to class 4 are easily attained even by unskilled operators.

It is not necessary to remove the tapping unit when returning to drilling operations, all that is required is to swing the tapping attachment out of the way. Foot control switch leaves hands free for loading work. Built-in switch actuates drill press motor eliminating the need for any other intermediate reversing device.

Using the Boyar-Schultz lead screw tapping attachment with one or more gang-drills permits continuous line production of drilling, boring, reaming and tapping operations without removal of work from the jig. No needless production lag in transferring work to a separate tapping unit. Saving in time, floor space, and excessive handling cost assures straight line production to the finished, precision-tapped job.

Specifications

Capacity: (Maximum capacity of tap dependent upon drill press used. Capacity based on 17" Delta Drill press. Capacity of other drill presses dependent on proportionate size.) Max. depth 2" brass and aluminum, 0–80 to ⅞" steel, 0–80 to ⅝".

Spindle: Spindle bore ground to receive shank of standard ⅞" tap; smaller sizes held by adapter bushings. Three adapter bushings any size from 0–80 to ⅞" as selected furnished as standard equipment. Adapters for taps from $^{15}/_{16}$" to 2" available on special order.

Electrical Control: Entire Unit completely wired and ready for use. Available for use with 3-phase and 2-phase (3-wire) circuit of any voltage from 110 to 550, 25 to 60-cycle.

Precision Made T-slot Bolts

Boyar-Schultz T-slot bolts are precision made from high grade alloy steel and heat treated. Heads are square with shank and will not pull out. This feature insures presenting a flat bearing surface to the T-slot for utmost protection and firm holding. These bolts are made in ½", $^{5}/_{8}$", ¾" diam. in a wide selection of lengths from 1½" to 12". Along with a matching line of precision washers and nuts, a line of precision T-slot bolts is also available in ⅜", $^{7}/_{16}$" and ½" diam. for screw machines No. 00, No. 0 and No. 2, respectively. These bolts are specially designed for fastening of tool posts for forming tools, circular tools, cut-off tools, etc.

Copper Head Laps

For internal lapping operations, Boyar-Schultz copper head laps are available in standard and expansion types. Standard type consists of steel arbor and replaceable copper sleeve, and is available in 20 sizes from $^{1}/_{8}$" to $^{15}/_{16}$".

Expansion copper head laps consist of arbor, socket wrench, and replaceable copper sleeve. Arbor is made up of expansion body, shank, locking collar, washer and socket screw. Twenty-five sizes range from 1" to 2½". Above sizes are available from stock for immediate delivery. Intermediate or large sizes, and laps for special applications can be furnished promptly: Send drawings, with inquiries.

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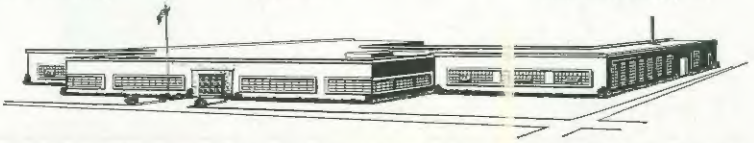

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